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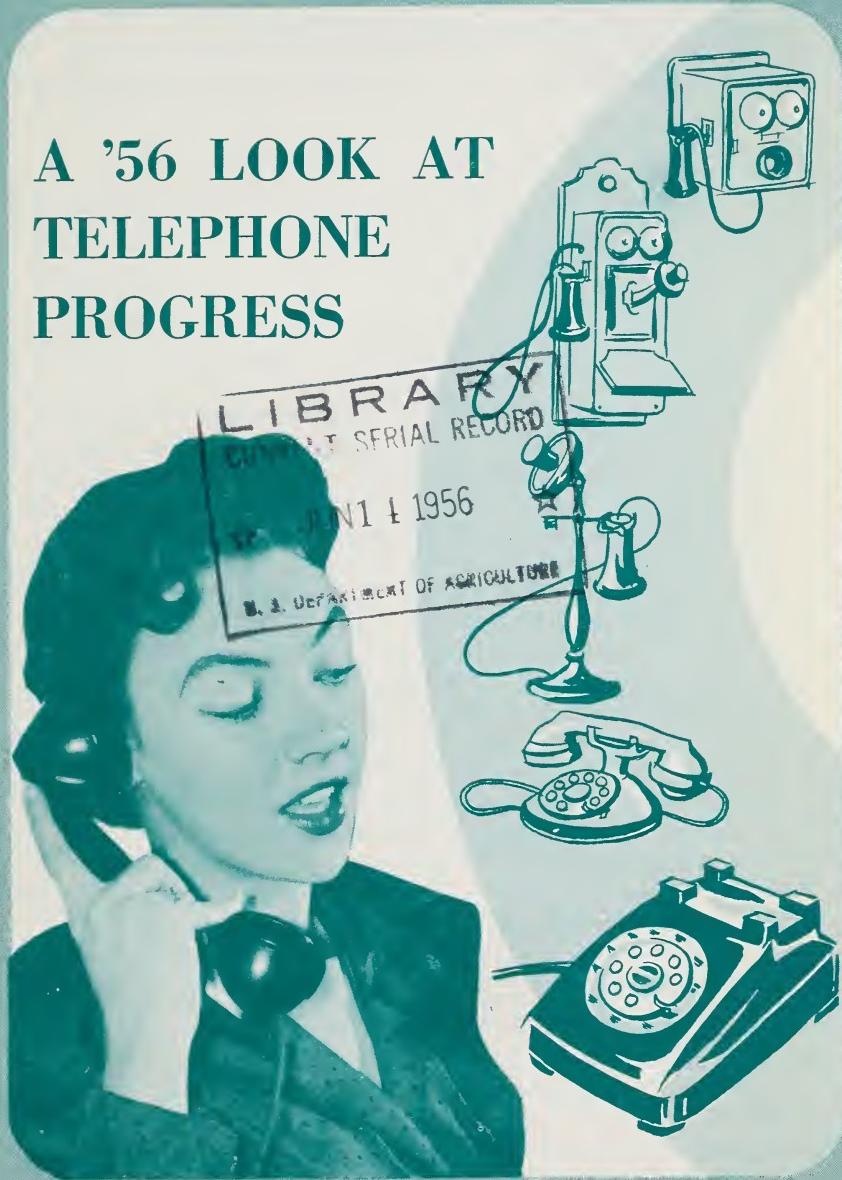
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Rural Lines

JUNE
1956

A '56 LOOK AT TELEPHONE PROGRESS





The White House on May 7, 1956 made public an exchange of correspondence between President Eisenhower and Anchel Nelsen, Administrator of the Rural Electrification Administration. Mr. Nelsen tendered his resignation as REA administrator, effective May 15, 1956, to seek nomination for Governor of Minnesota. In his letter, the President said that he accepted the resignation regretfully, but respected his strong sense of duty and attachment to his home and State.

The following message was written and sent to the printer before the announcement.

THE REA rural telephone program is having the most successful year in its history. By the time this current fiscal year is over on June 30, we expect to have reached a loan total for the year of about \$80,000,000, which will be a new record high.

The amount of loans made in any one year, of course, is not the only measure of a successful program. Our local object in REA is to bring modern telephone service to the farmer and on this score good progress is being made.

Farmers with telephone service, according to Census figures, increased 10 percentage points from 1950 to 1954. Today about half of all farms have telephones, but many are the old-fashioned magneto type. More than 600,000 subscribers in rural areas will be provided initial or improved service under REA telephone loans already made. This is in addition to those getting service by other companies in rural areas.

Up to the present time 215 telephone borrowers have placed in operation 785 modern dial exchanges. These Independent telephone companies and cooperatives have completed construction of more than 60,000 miles of pole line and have 25,000 miles more under construction.

The most encouraging part about this construction picture, however, is the accelerating rate at which loan funds are being drawn down by borrowers. In fiscal 1955 these advances of funds reached \$40,000,000, which was 40 percent over the previous year. This fiscal year we expect to advance a total of \$55,000,000 for expanding and improving rural telephone service.

These figures don't mean we have reached the ultimate in the rural telephone program but they do demonstrate that our work in behalf of the program is getting results.

Administrator.

The New Boom In Rural Telephones



With Financing Available, Farmers Are Getting Good Modern Service

WHY RURAL telephony is unique and singularly different from all other types of public utilities is one of those truisms which sets tongues wagging no matter where your interests lie. And if that sounds a little complicated, it is because the rural telephone business itself is more than a little complex.

A lot of people tend to measure rural telephony by rural electrification standards. It can't be done. Many of the reasons why are rooted in telephone history.

Many of us have forgotten that the telephone burst on the rural scene with an impact far greater than those modern marvels, radio and television. The telephone was the first modern invention to free the farmer from his isolation.

It was out of the highly charged emotional atmosphere of those days that rural telephony's headaches were born. Telephone companies of all types sprang up everywhere. Inexperienced promoters and sincere crusaders spawned every type of organiza-

tion that had ever been conceived. Lines went up on any pole you could find. Telephone stock prices boomed and installation prices mounted higher. Then just about the time the all-black Model T replaced the one with the brassy radiator, a reaction got started.

The telephone company box score over the years is both revealing and amazing. Census figures for 1907 showed that there were 22,971 telephone companies in operation, of which nearly 18 thousand were farmer-owned switcher lines without an exchange or an operator.

By 1917, the census turned up 53,234 companies in operation. Bell companies amounted to 145; companies having income over \$5,000 a year came to 2,055 and companies with income under \$5,000 annually totalled 51,034.

Using the figures from the 1954 Census, the United States Independent Telephone Association reports that as of the end of 1954 independent companies amounted to 4,961; Bell companies to 23,

and rural switcher lines were estimated to be around 60,000.

In 1920, the percentage of farms with telephones amounted to 38.7, a figure which was to be the high water mark for the next 30 years since the 1950 figure was 38.2 after being down as low as 25 percent in 1940.

By 1954 the percentage of farms with telephones was an all time high at 48.4, an increase of 10 percentage points in four years.

The field which rural telephony covers is much greater than is generally understood. In addition to the 22 million people living on farms, there are some 36 million in towns with a population of not more than 2,500. A somewhat

typical small telephone system has as its hub the trade center of the area with lines branching out into the country as far as the farmers have a community of interest with the town.

It is this pattern together with the organizational problems arising out of the history of rural telephony which pose some real problems in the extension and improvement of rural service.

The problems are common to all companies operating in the rural field whether they be Bell, Independent or non-profit groups.

In some areas, extension of service on the farms is handicapped by the farmer's previous experience with telephone service.

But the main thing that stands

When the Telephone Was Young

Anyone who bothered to listen to Grandpa's dinner table stories will recall the one about the biggest event at the Chicago World Fair (also known as the Columbian Exposition)—the one before



1900. It was free telephone calls to places as much as a hundred miles away. City folks had mild hysterics as the country boys showed their distrust of the new machine by shouting at the top of their lungs.

Before long the telephone craze sprouted telephone companies of every type out of just about every crossroads settlement where someone wanted to talk by wire to someone else. The long coffin-like telephone box became the prize showpiece of many a home. It spit fire during thunderstorms and erratic service was popularly believed to be caused by birds on the wire. More birds got themselves shot that way.



In many homes, the telephone was so prized that it took a place of honor in the parlor. There it competed with Aunt Ella's sea-

out is that, after more than 60 years of telephone service in rural areas, there are a lot of telephone companies and many of them have been there a long time. In many states the service boundaries have been defined and the maps are on file with State Commissions. There are but few instances where unserved farms exist in such numbers in a single area as to make the formation of a new company feasible. In any event, it is usually impractical to serve farms independent of their community centers and small towns. Unserved farms are more likely to take a checkerboard or small pocket pattern in and around areas already served.

The size of the job of extension

of service is indicated again by the 1954 Census which shows but a single state—Connecticut—where more than 9 out of 10 farms have telephones.

And it appears that much of the job of expanding and improving rural service will be done by existing companies or on the skeleton of existing facilities. In a good many instances extension of service depends on modernization or improvement. Modernization in turn is dependent on financing.

Here is where we turn back to history again. Even at the beginning, the problem was the same. A telephone system requires a heavy initial investment to get into operation. During the early stages, commercial companies ex-

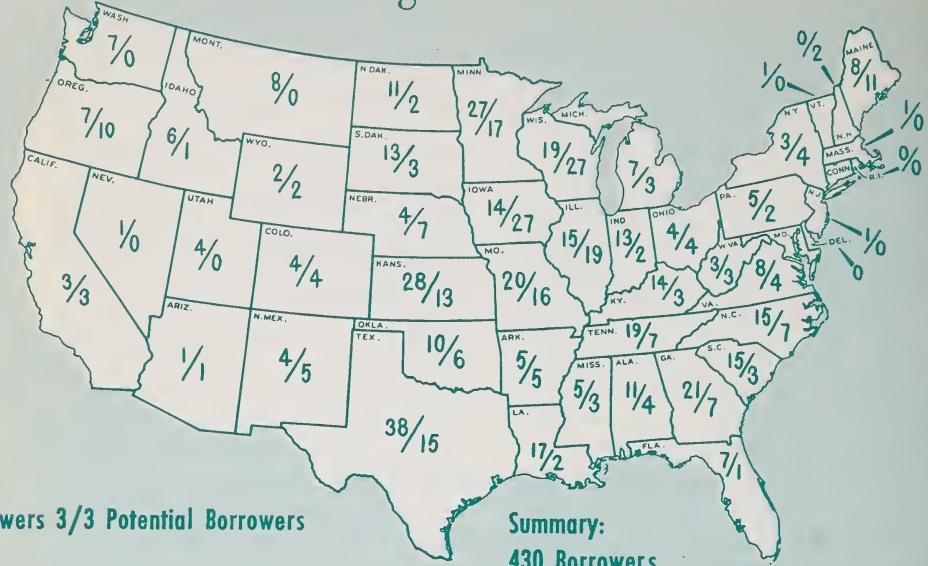


shell, the collie dog scatter rug and the painting of the red roses under attack by an over-size bumble bee. And on the two-tiered mail order reed organ the main sheet of music was entitled "Hello Central, Give Me Heaven 'Cause I Know My Daddy's There."

Central was rightly named. She was about the most important person around in those days. All of the affairs of her little world were at her finger tips. She gave the correct time, weather forecasts, train schedules and baseball scores. She knew the open and hidden romances as well as she knew the price of eggs. When there was big news she gave the "general ring" and thoroughly predated the newscasters. Central was probably the most admired person in the area although she did have some bad times with people who could never remember whether their ring was three longs and four shorts or four shorts and three longs.



REA Telephone Borrowers and Potential Borrowers Seeking First Loans



Key:

Borrowers 3/3 Potential Borrowers

As of March 9, 1956

Summary:

430 Borrowers

255 Potential Borrowers

pressed little interest in rural telephony, but farmers needed and wanted service. So they organized thousands of mutual companies and farmer lines. Financing was usually inadequate and maintenance was neglected.

As a result, the service often got worse instead of better. The cost of everything that goes into the cost of supplying telephone service went up. Age caught up with lines, plant and service. The smaller the company, the bigger the headache. Revenue and service declined in close relationship. No matter how sincerely a company wanted to extend and improve rural telephone service, the economic facts of life virtually barred any new development. Conven-

tional financing had its own restrictions that practically barred the use of private capital by the small companies.

The whole scene shifted radically in 1949 when the Congress established the rural telephone program. For the first time money was available over a 35-year term at 2 percent interest. Shortly, other sources of financing re-examined the rural telephone field and offered plans of their own.

Along with this revived interest came some new ideas in engineering, research and standardization. The period of marking time was over, the new advance was under way. The unattended dial exchange was the first great advance in automation. The modern

plant costs more but it is more efficient. The service it offers is so much more efficient and so much more satisfactory to the subscriber that when taken in conjunction with more opportunities for long range debt amortization, the once shadowed picture of rural telephony has taken on distinctly brighter hue.

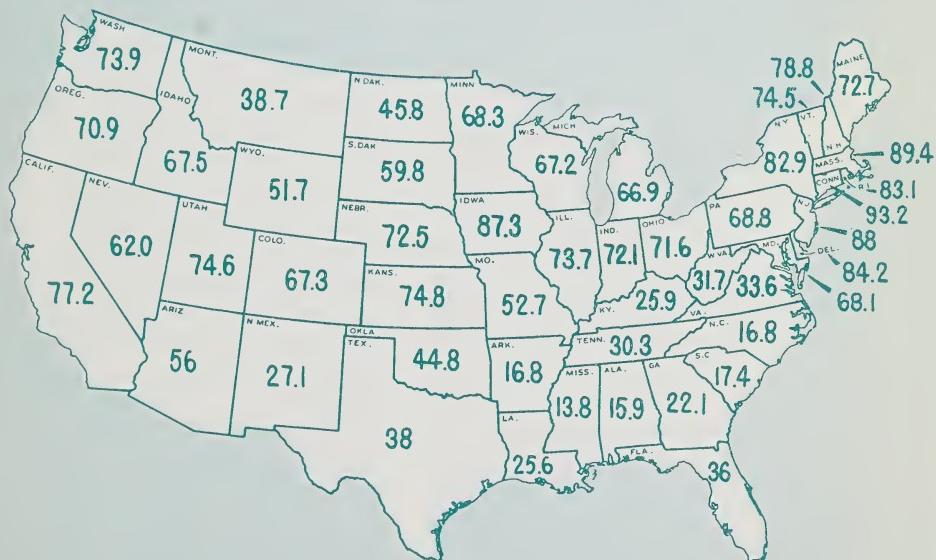
From the standpoint of the farmer-subscriber, several things are important. For the next 5 to 10 years, a farmer without a telephone has about the best chance he ever had of getting service when he wants it. And when he gets service he will be getting about the best service to be found anywhere. The cost may be a little higher than he expected to pay but the quality and variety of

service will be a fair exchange.

From the standpoint of the telephone company, with modern service to offer, adequate and low cost financing, the prospects in the farm and rural telephone field never looked better. With new plant, properly maintained, and good service to offer, the extent to which the business may be developed is limited primarily by managerial ability and skill in promoting the desirability of modern rural telephone service.

And according to our population trends, the small towns and rural areas of our Nation are destined to grow larger not only in numbers of people but in the growth of service establishments and industries which follow on the heels of population growth.

Percentage of Farms with Telephones, 1954 Census



Program Progress

HOW do you go about measuring the success of the rural telephone program? Do you add up the total amount of REA telephone loans? Do you try to count the number of modern dial telephones installed in farm homes? Or appraise the financial stability of the hundreds of enterprises which are converting to dial and extending their lines to unserved farms?

From any standpoint the industry's achievement is outstanding, and REA's record of assistance is impressive.

LOANS

From the first telephone loan in February 1950 to the end of March 1956, REA made loans amounting to \$292,877,542 (net). REA telephone loans have now reached an annual rate of about \$80 million. This is believed to be about the maximum amount that can be used readily with present equipment manufacturing capacity and available engineers. The long lead time for equipment is one reason that a little less than half of the loan funds or \$136,940,448 has been advanced.

There are now 447 borrowers in 43 states and Alaska. States with the most borrowers are:



Texas 39, Kansas 30 and Minnesota 27. States with the most money in telephone loans are: Texas \$26.7 million, North Dakota \$19.4 million and Minnesota \$18.3 million.

Ownership of telephone enterprises which have borrowed REA funds vary widely. There are family-owned telephone companies, stock corporations, mutuals and cooperatives. All are incorporated. For statistical purposes, REA classifies borrowers as commercial companies or as cooperatives. REA considers loan applications on an equal basis from any enterprise — whether co-op or commercial — which assures improvement and extension of rural service on a feasible basis.

From the start of the telephone program until March 1953, most of the borrowers were commercial telephone companies. Then for the next two years a majority of the borrowers were cooperatives. Today, REA loans have been made to a total of 254 commercial telephone companies and 193 telephone cooperatives. Commercial

companies received \$129 million in loans and cooperatives received \$163.8 million.

REA has on hand about \$12 million in loan applications from 40 present borrowers and about \$32 million from 87 new applicants. In addition to these loan applications which are now being processed in REA, there are about \$63 million in loan requests developing in the field.

CONSTRUCTION

Station statistics, rather than loan data, may give a better guide to the effectiveness of the REA telephone program. Loans made to date will provide improved service—almost all of it dial—to 325,446 existing subscribers. In addition, 328,285 will get service for the first time. Most of these 653,731 present and potential subscribers are farm families.

Proposed construction includes 190,876 pole miles of line, of which 173,000 miles will be new and rebuilt line. Line on which construction is completed amounted to 61,620 miles at the end of the first quarter of 1956. Besides this borrowers have 25,000 miles in various stages of construction.

As of April 1, 1956, 215 borrowers had placed in service 785 new dial exchanges financed by REA loan funds. There is a lag in reporting stations connected, but it is estimated that REA-financed facilities will be serving 225,000 rural subscribers by the end of the fiscal year, June 30, 1956.

REPAYMENTS

Because of the deferment period which allows borrowers time needed to get into revenue-producing status before commencing

repayment of the REA loans, interest and principal payments are of modest size. As of January 1, 1956, borrowers had repaid \$1,-881,674 in principal and \$1,100,-515 in interest.

Although most of the telephone companies and cooperatives are meeting their debt service on schedule, 25 borrowers were behind in payments as of March 31, 1956. A year ago there were 29 delinquent. The amount of principal overdue was \$388,384 as of March 31, 1956. Interest more than 30 days in arrears amounted to \$149,392.

The "Average Borrower"

While it is statistically impossible to define a typical REA-financed telephone system, here are a few "mean" figures to consider:

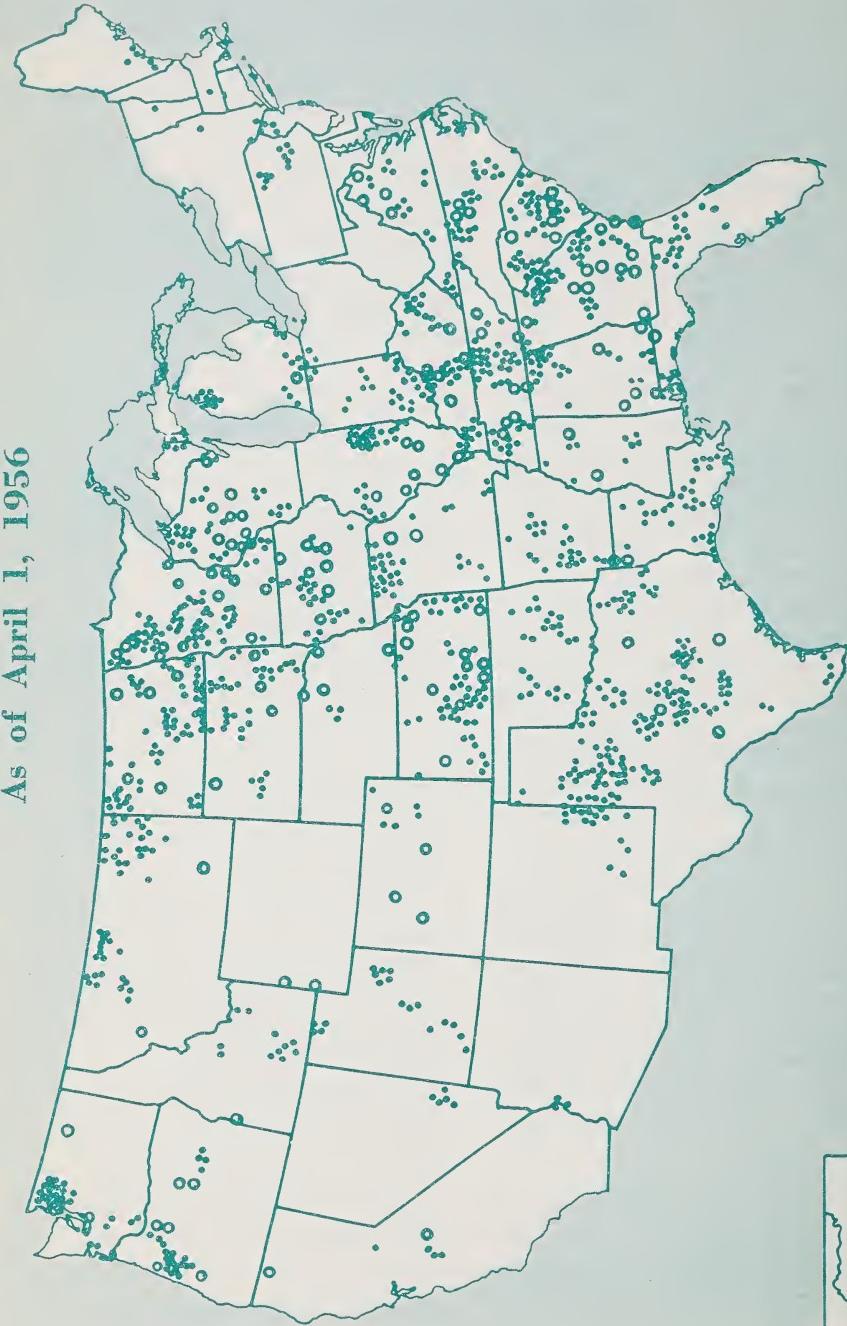
The average telephone borrower has loans totaling \$665,000. Loans to individual borrowers range from \$67,000 to the Woodstock Telephone Co., Woodstock, Minn., to \$5,-106,000 for the Grand River Mutual Telephone Corp., Princeton, Mo.

The average borrower has built or plans to build 425 miles of line to serve 1,450 subscribers with modern dial service. About half of these are new subscribers.

The average borrower with all exchanges cut over to new dial service has $3\frac{1}{2}$ exchanges. A number have only one exchange; Pioneer Telephone Cooperative, Philomath, Ore., has 15.

Dial Telephone Exchanges Financed by REA Loans

As of April 1, 1956



- Dial exchange completed or under contract
- Borrower with exchanges not yet under contract



It Pays When You

Plan To Tell & Sell



WHETHER you sell apples or atoms, you have to *tell* and *sell* to stay alive in your business today.

To help REA borrowers with this management problem, we asked REA specialists to outline the main points of a workable public relations and merchandising program for rural telephone systems. Their observations and suggestions are the basis for this article.

The change to dial has intensified the need for "tell & sell" activities, they agree. The time is past when management can depend on the switchboard operator to handle PR. Her retirement leaves a vacancy which must be filled. Every employee must be a salesman and be concerned about the company's financial success and provision of a maximum of service to its subscribers.

Telephone economics make a strong case for merchandising more than standard telephone

service. For one thing, you can step up revenue from certain types of additional services with little or no increase in basic plant investment. And selling can help to produce the revenue needed to meet debt repayment on time.

The market for additional telephone services in rural areas is almost unlimited, REA people believe. They point out that the big drive has been to get telephone service to the farm, with little attention given to best use of the telephone as an instrument of modern agriculture and good country living.

Farmers who are proud that their farms are showplaces, equipped with the newest machinery and fully electrified, may have only one limited-service phone. Surveys show that rural subscribers generally lag behind urban residents in use of extension telephones and special service devices. Through a planned sales program you can help sub-

TELEPHONE

Build Publ

With These

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Your name, prominently displayed on office building, exchanges, and vehicles, is a reminder of good telephone service. A distinctive emblem (right) aids identification.



Directories (left) and newsletters (below) keep subscribers informed about modern telephone service. Local newspapers will welcome stories of new developments.

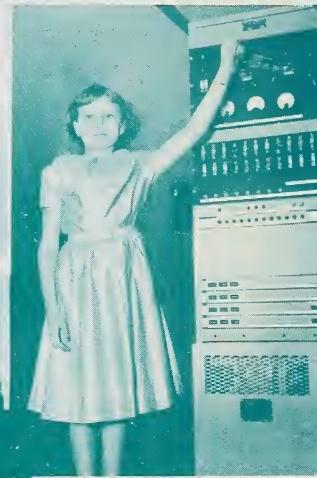
Signup (right below) and stock selling (far right) offer opportunities to establish good subscriber and public relations.



ORROWERS

Relations Activities

of community participation in progress: Mayor lends a hand at king (below); another mayor telephone Day (center); mayor's rows switch at cutover ceremony.



SCRIBER
LATIONS



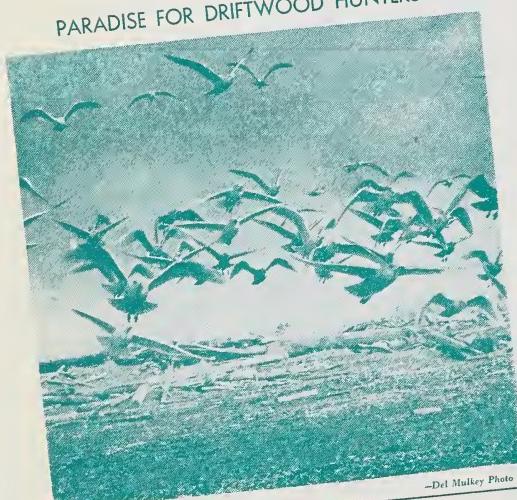
scribers gain the benefits of modern telephone communications with such services as these:

- Loud ringing gongs
- Extension telephones
- Intercommunication service from barn to house, etc.
- Higher grades of service
- Additional listings
- Extra-length cords
- Answering devices
- Jack and plug equipment
- Telephone sets for the hard-of-hearing
- Color telephones
- Hand-free sets
- Directory advertising

New interest in "telling and selling" is spreading throughout the telephone industry. Almost any issue of a business or trade journal will tell of new merchandising activities by telephone industry leaders. And they miss few chances of telling what good

Yellow pages of the Twin Harbors Beaches, Wash., directory promote the area's fine recreation facilities and bring in substantial revenue for the REA borrower, Cohasset Beach Telephone Co., Aberdeen. This is the first page of a 40-page section. Regular listings use only 10 pages of the directory.

PARADISE FOR DRIFTWOOD HUNTERS



How To Use...

The Yellow Pages as a shopping guide

Shopping by telephone saves both your time and energy. Just turn to the alphabetical list of dealers who are equipped to fulfill your needs as courteously and efficiently as though you had visited their places of busi-

telephone service and enterprising management mean to the nation, region, state, city, town and countryside.

Don't let the thought of the competition or the intricacies of a new game deter you, REA specialists advise. When you take stock, you'll find you have many factors in your favor.

You are part of one of the real "blue chip" segments of American business. You render a vital public service to your community.

Public acceptance is also in your favor on the selling side of your business. Businessmen, remembering how poor service can put a drag on trade, value the new modern telephone service. Most of them should be aware it takes a substantial investment to provide the good telephone service a live trading center needs. The main problem is to show them how to utilize this service fully to their profit and advantage.

Even the busy homemaker has come to accept the telephone as a necessary part of the household establishment. She is relieved to trade the hand crank for the dial and to have extended area service. Here too, the problem is to make her aware that one standard telephone is inadequate.

"That's fine theory," you'll say, "but how can we do the public relations and selling jobs without increasing our staff and expenses beyond the point of no return? We are busy enough just to keep service going."

Your REA telephone advisors say the best kind of program for a rural telephone system—whether it's public relations or sales work—is the one that the directors, officers, manager and em-

Rural Lines

ployees of the firm carry out themselves while performing other duties. But it does call for planning, timing, training, and performance. If not, it will splutter along, like a Model T motor out of time, and get nowhere.

In most local telephone systems it is simply a matter of sitting down and laying out a plan of operations, then fitting these activities into daily routine. Any do-it-yourself addict knows that he must begin with a set of plans and a bill of materials. Planning is even more basic and essential to effective telling and selling for the telephone system.

An understanding of basic differences in the two jobs will simplify the matter of "how-to-do-it."

One definition for public relations is "that function of an organization designed to earn for it a good reputation with the public, establish and maintain it in the public mind as an institution which operates always in the public interest." Public confidence and understanding are the fruits of good public relations.

Putting it another way, public relations is basically a matter of presenting the story of your institution to the public. It means telling the public about your policies, people, problems, and progress. And many times, actions will speak louder than words. Your audience is the entire community, subscribers and nonsubscribers alike.

Merchandising, telephone specialists point out, is more a job of selling a service tailored to the needs of the prospective user. It is more than order taking. You are in position to know what service will do the best job for the



An extension phone in the kitchen is a timesaver for the busy farm homemaker.

subscriber, and it is your obligation to advise the type of service he requires and the benefits he will enjoy.

Another point our specialists make is that telling and selling call for different forms of communication. Just be sure that the one you use is designed for the job you have in mind.

In the field of public relations, you will rely upon such time-tested means as newspaper stories, newspaper advertising, radio time, participation in public events, printed reports, newsletter, and direct mail to get your story to your audience. Several examples of these as applied by REA telephone borrowers appear on pages 12 and 13.

These media may turn out to be expensive and unsuited to the straight selling job. Your best bet is to train your own people to sell at every contact with the pub-

lic. Training does not have to be complicated or laborious. One first step should be to sit down around a table and discuss what you want to do and how it can best be done. Many times, it will develop that others have seen the need and started thinking of answers to many sales problems.

One telephone sales executive says it is surprising what these home-grown sales forces can do. Once the employee has made a few sales, the feeling of satisfaction will lead him on to greater effort.

In planning your sales program, REA specialists also urge you not to overlook the possibilities of stimulating long distance traffic. One method is to provide the local subscriber with the telephone numbers of his supply houses or contacts in distant cities. Several REA borrowers also issue credit cards which encourage use of LD service.

Your sales effort should begin when the order for telephone service is received. This interview should bring a picture of the home, the number in the family, and the type of farming or work followed by the head of the family. This information opens the way for a definite recommendation for adequate service. For example, a dairy farmer or stockman will spend much time in the barn and outbuildings, and can use an extension phone. In many cases he can also use a higher grade of service profitably.

The installer or repairman will have many opportunities for friendly selling. Another source of sales may come from the information record. Community dial offices should arrange with operator assistance offices to keep a rec-

ord of NF (no telephone) and DA (don't answer) reports which may give leads to extra bells or listings.

"Package selling" helps both the seller and the buyer. This is the technique of making one recommendation of service at one overall price, instead of starting with the basic service and adding parts and prices step by step. The package price helps to minimize the cost factor, and concentrates on selling the subscriber on the benefits of adequate service. Color sets, illuminated dials, spring cords, extension bells, and other services may be made parts of the package.

Your package selling can be simplified by developing a series of named packages covering the telephone service needs of various sizes and types of farms or rural homes. The series might begin with a 2-telephone plan and go on to 4 or 5 stations, each with its own convenience services.

REA telephone people point out that equipment suppliers have developed special packets for use in sales and public relations work.

You will also find it helpful to read the article, "Selling Rural Service," in RURAL LINES for November 1955 (pp. 18, 19). Future issues will carry specific suggestions on how to build a continuing sales program.

Selling is one of the most challenging telephone jobs. And the best part is that you help your organization grow as a local service institution when you help the subscriber get the telephone service he needs.



REA Experience Helps Borrowers



WHEN REA moved to even the workload of its telephone divisions recently, it marked a continuing step to strengthen and broaden the specialized services available to telephone borrowers with tough system problems.

The new 8-section organization reduces the number of borrowers for which each section is responsible. It means that REA is better organized to keep pace with the needs of the growing rural telephone program.

Now over six years old, the telephone program involves nearly 450 borrowers. New ones are being added at the rate of 100 a year. As the program develops, borrowers experience varying problems. There have been "lean" and "fat" crop seasons, long dry spells, excessive maintenance costs, poor customer service, and inexperienced management to name a few. Any one of these problems can spell plenty of trouble for borrowers.

Of course, as the telephone pro-

gram develops, many borrowers are employing their own technical staffs, including engineers, accountants and consulting services. This "on the spot" handling of routine and major system problems has resulted in a general improvement of telephone service for farmers.

But REA wants its borrowers to know that within the limits of staff services and personnel, their urgent calls for technical assistance on problems which they cannot handle will get careful attention. This goes whether the problem requires the help of a single staff technician or the diversified assistance of the trained "Operations Analysis Team." The task force goes to trouble spots, sizes up the problem and makes recommendations on its solution to the management. The borrower then gets followup help from REA's field technicians in applying the steps of the plan.

The case of Cap-Rock Rural Telephone Cooperative, Inc. of Spur, Texas, offers an example of

how an REA "Operations Analysis Team" goes into action (see story in box below).

A drought "victim," Cap-Rock tightened up on operating costs, expanded its area coverage, put over a telephone selling job, and applied management tips recommended by the team of REA technicians. Today, this borrower is adding new subscribers at the rate of 10 a month and expects to make debt service for the first time this year.

The help REA's task force gave

Cap-Rock is only part of the technical assistance its specialists furnish borrowers from time to time.

Many borrowers have already benefited from the service REA furnishes in the preparation of loan applications and in drafting plans to meet loan requirements.

Technicians help borrowers work out difficult problems involving excessive line noises on circuits which are the source of a lot of subscriber complaints. REA's special test equipment is used in solving some of the tough-

REA Team Helps Texas Borrower Solve Problems

Cap-Rock Rural Telephone Cooperative, Inc., serving the Dry Lake, Girard, Jayton, Clairemont, Swenson and Peacock communities, from headquarters at Spur, was one of the first Texas borrowers to receive an REA loan. When the co-op cut over the last of six dial exchanges in September, 1953, a drought had set in and farmers had lost the first of four crops in a row.

Farmers had seen lean and fat years before. Few guessed that a long dry spell was on the way. Rural people reasoned that crops had been generally good over the years. Bank accounts were still intact. And in the towns, business houses were paying well. There were prospects of more and more subscribers. The outlook was good.

"We felt well off and pleased with things after the last cut-over, even with a bad crop year behind us," says James Wright, the co-op's manager. "Times were sound in our area. We served about 281 subscribers and we figured on running the number to 800 or so with our \$735,000 in REA loans.

"Folks soon called it one of the worst dry spells Texas has known. Moisture got so scarce the summer of '54, the Government picked our area as one of some 72 critical drought sections in the state.

"As time went on, our farmers and merchants began to feel the pinch. It took only a couple of bad seasons to put the cooperative in the 'red.' For as farm incomes go, so goes our co-op. We managed to hold our 281 members, but couldn't add new ones."

With a drought on his hands and business at a standstill, Mr. Wright backed off and took a broader look at things.

He looked for ways to cut operating costs and sign up a flock of new members. He tackled these problems with help from REA

er trouble spots. Corrective practices are also recommended to borrowers with major lightning damage problems. When complex traffic problems arise, technicians take traffic readings and after careful analysis, recommend steps to correct overload conditions at the lowest cost to the borrower.

When rural development outgrows the borrower's telephone system, REA works with the borrower and its engineer on plans to expand the system and meet new subscriber demands.

In cases where telephone equipment requires excessive maintenance or fails, REA helps the borrower and manufacturer to get better performance. There is also technical training for outside plant crews in cable splicing and open wire ties. Cable splicing with plastic cable was a serious problem in the early days of the program. Open wire ties cause line wire abrasion and cause trouble in many areas of the country. REA helps borrowers solve such problems by analyzing the prob-

accounting, engineering and operations technicians—the Operations Analysis Team.

REA staffers, knowing Cap-Rock had neither the funds nor trained personnel to develop new service areas, took these steps: (1) Surveyed a new "C" area in Motley, Crosby and Cottle counties; (2) after a review of the budget and plant, worked out a plan to serve the new area without additional loan funds.

Operating overhead was cut by reducing the field crew from four to two workers, and the office staff from two to one clerk. A \$420 monthly saving in heating costs was made by installing a switch which controlled heat during off hours. Study of insurance rates saved the co-op \$170 a year in vehicle premiums.

Cut over of the new "C" area in early summer will add around 200 more telephone users to the co-op's rolls. Mr. Wright says the new subscribers, plus those added in other exchanges, will earn debt service for Cap-Rock before long.

To help encourage sign-ups in the "C" area, Mr. Wright put on some 15 sales meetings. He told farmers about the co-op's dial service plans, explained Cap-Rock's cooperative program and pointed out the benefits of top telephone service.

"We know rural people didn't buy all we told them," he explained, "but we do believe those meetings helped put over the sign-up. Many "C" area residents did all they could to help us. One group of land-owners even worked out a plan so the co-op could get free sites for the two exchanges.

"It's been a long, hard pull, but we believe we'll soon be back on a solid footing. Our goal now is to make debt service and catch up on unpaid principal and interest. The way things look now, we're going to make it. There's a lot in the moral, 'Every borrower should be ready to face up to bad economic situations.' "

lem and finding practices which will correct it.

Also included in REA's specialized services to borrowers is its management analysis of borrowers' operations to detect weaknesses in organization and improve operating practices. Most borrowers are already acquainted with REA's accounting service and the assistance given in record-keeping and procedural practices.

The staff of the Office of the General Counsel in the Department of Agriculture assists borrowers' attorneys in solving legal problems relating to construction and practices of telephone systems.

Special aid is given in negotiating with connecting companies on connecting company agreements such as traffic and extended area service agreements.

On the SAGE program, REA maintains close liaison with various agencies so that it can advise

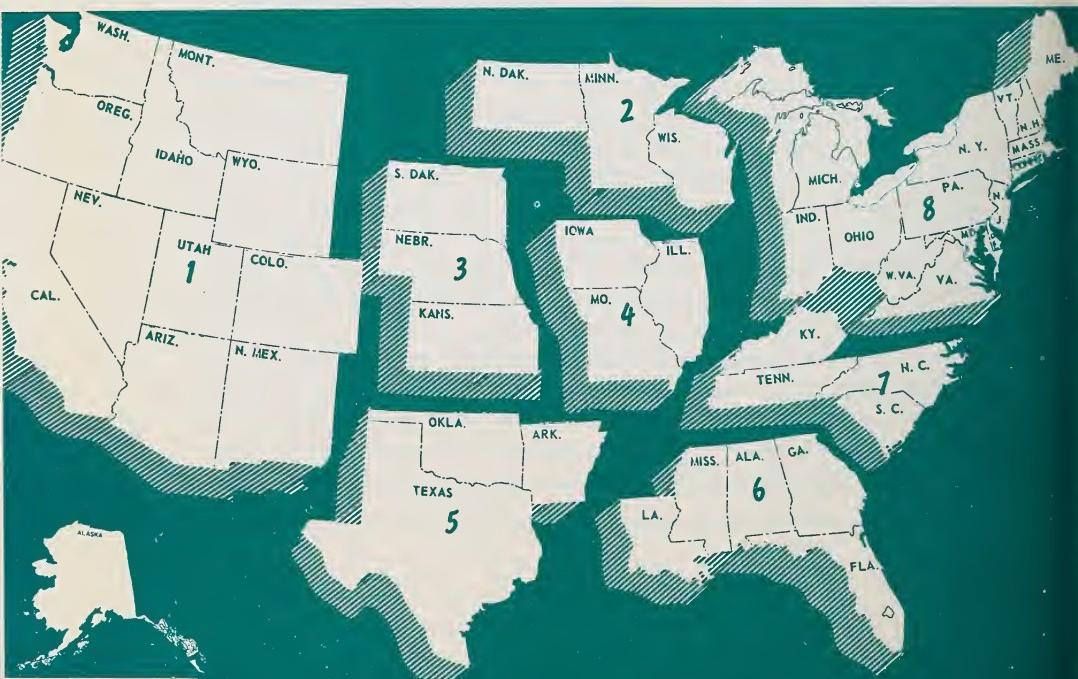
borrowers in expediting loan requests and in other phases of the national defense activity.

Technicians and specialists serve as speakers, discussion leaders and panel members at state and regional meetings of borrowers and other telephone companies.

Many borrowers are putting the management, business and operating practices advanced in the Telephone Operations Manual to good use. TOM, as it is called, helps borrowers do a better job all-around.

In these and other ways, REA makes available to its telephone borrowers the services of its telephone specialists who together represent hundreds of years of experience in handling every sort of telephone system problem. As one borrower puts it, "My REA loan meant more than money—it's more like a scholarship in good telephone engineering and management."

New Geographical Sections in REA Telephone Divisions Assure Even Workload and Better Service to Borrowers



in rural telephony . . .

ELECTRONIC

Magic



REA's Program for Stimulating Technological Development is Paying off in Better Rural Service

YOU look up at the telephone line as your car bounces along the dirt road that leads toward the state highway.

"Looks just about the same as the line we put up in 1921," you say to yourself as your eye follows the flow of the wires.

Perhaps this new telephone line doesn't seem much different. But look deeper and you will find a modern telephone system making use of technological advances.

Among the most promising new ideas to help the REA telephone program do a job in the sparser rural areas are those in the field of electronics. The reason for this is simple. Electronic equipment offers possibilities for reducing costs, for providing flexibility in meeting changes in demand, and generally, for improving the quality of service.

Electronics, you recollect, means the little vacuum tube and, more recently, the transistor. These are the mysterious gadgets used in radio, radar, television, X-ray and hundreds of other devices. Now electronics is also playing an important part in rural telephony.

A recent survey by REA indicates that more and more borrowers are turning to electronic equipment. What's more, the trend is accelerating.

All this, insofar as the REA-financed segment of rural telephony is concerned, stems from a broad-scale research program that REA launched to hunt for ways to cut costs and to develop facilities capable of giving better service to farm families.

This search for new ideas is paying off and many folks in the "thin" rural territories are now

getting service that might otherwise be impractical.

Cooperative projects involving REA, manufacturers and borrowers were set up early in the REA telephone program. The object was to design equipment suited to rural conditions.

On the basis of knowledge thus obtained manufacturers are today turning out new equipment on a production scale.

Here is how electronics is helping rural subscribers get better, lower cost service:

CARRIER. Hitch-hiking is what carrier is sometimes called because the system will permit two or more messages to utilize the same pair of wires.

Up to now carrier techniques

have been used to increase the capacity of trunk circuits between exchanges. But increasing use is also being made of the technique to serve local subscribers.

Subscriber carrier systems, according to REA engineers, show particular promise of reducing the cost of serving rural subscribers. However, they point out, this type of equipment has only recently been developed and long time operating experience is unavailable. Therefore, REA recommends that its borrowers pursue a policy of utilizing the equipment on moderate scale and only in situations where savings are substantial.

One hundred forty-seven channels of the subscriber type of equipment at a total of \$145,000 have thus far been installed.

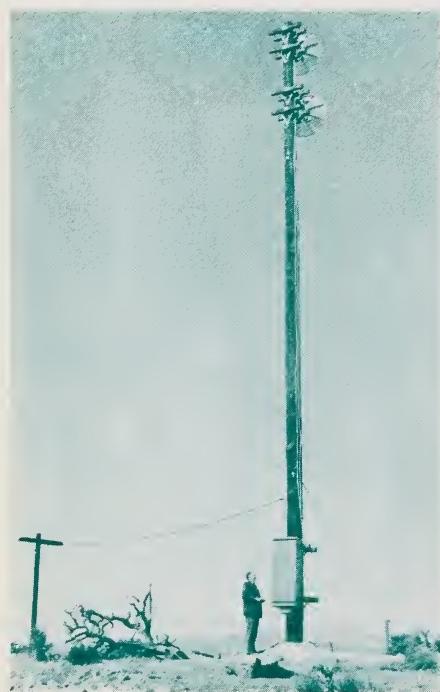
What about the future for this device that can make two wires do the work of many?

The engineers put it this way. First, present installations are coming up with encouraging performance data. Second, new equipment with later designs and even better performance potential is becoming available.

MICROWAVE. As of March 1, REA borrowers had installed or were in the process of installing \$426,000 worth of microwave equipment. Involved are 94 microwave channels and 24 microwave terminals.

Use of microwave facilities actually eliminates the need for pole line. It has been found to be particularly advantageous in areas where construction of new pole lines is likely to be costly and where little subscriber development is to be expected.

Microwave subscriber services are also being tried out. Mobile



Microwave links the Boulder and Escalante exchanges of the South Central Utah Telephone Assoc., Richfield. Pole line runs nine miles into Escalante from Point of Rocks.

radio subscriber installations recently were made by two borrowers in Louisiana.

REPEATERS. Electronic magic is also being used in conventional operations. Voice repeaters are a case in point.

Where trunk circuits are in cable, these voice repeaters help keep the voice level up to transmission standards even though cable conductors of finer gauge are used. This spells greater economy.

On the subject of electronics and the REA telephone program, engineers feel only the surface has been scratched. Electronic equipment, they say, will eventually make up a fundamental part of rural telephone system.

As an example, they say, look at the transistor. This is the tiny little gadget that now is rapidly making the vacuum tube obsolete. Equipment using transistors can be made more quickly, more easily and with substantial reductions in cost and size.

Because of the potential, REA engineers are working actively with manufacturers in the study of transistorized equipment. For instance, they want to find out how transistorized electronic equipment can be made to handle functions not now feasible with vacuum tubes.

Currently, work is also under way on the adoption of mobile radio equipment for use in small telephone systems.

Such equipment, engineers believe, will make it feasible for many REA borrowers to provide service to mobile subscribers and to isolated establishments in sparsely settled areas where costs of wire line and carrier equipment might be prohibitive.



Workmen test microwave equipment used by LaFourche Telephone Co., La Rose, La., to serve industrial subscriber.

So, the day may come when you can no longer drive down the old dirt road and have your eye follow the wire from pole to pole. If that happens, it could well be the magic of electronics resulting from the work of REA and the telephone industry.

(continued from back cover)

Additional Telephone Loans

- | | |
|---------|--|
| 672,000 | Craw-Kan Tel. Co-op Assn., Girard, Kans. |
| 427,000 | Chesterfield-Medora Tel. Co., Chesterfield, Ill. |
| 483,000 | Luthersburg Telephone Co., Luthersburg, Pa. |
| 357,000 | Wilson Telephone Co., Wilson, Kans. |
| 125,000 | Zenda Telephone Co., Zenda, Kans. |
| 550,000 | Wilkes Tel. Membership Corp., Wilkesboro, N. C. |
| 376,000 | Pioneer Telephone Co-op, Kingfisher, Okla. |
| 230,000 | West Jersey Tel. Co., Belvidere, N. J. |
| 486,000 | Deuel Tel. Co-op Assn., Clear Lake, S. Dak. |

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(GPO)

Loans Approved March 19 Through
April 6, 1956

Electrification

*\$ 50,000	Sandy Electric Co-op, Sandy, Oregon
77,300	Mutual Power & Light Assn. North Bend, Wash.
575,000	Lane-Scott Electric Co-op, Dighton, Kans.
* 50,000	Gulf Coast Electric Co-op, Wewahitchka, Fla.
1,840,000	Warren Rural Electric Co- op, Bowling Green, Ky.
520,000	Covington Electric Co-op, Andalusia, Ala.
1,006,000	M and A Elec. Power Co-op, Poplar Bluff, Mo.
320,000	Lincoln Electric Co-op, Davenport, Wash.
290,000	White River Electric Assn. Meeker, Colo.
* 130,000	Slash Pine EMC Homerville, Ga.
* 50,000	Arkansas Valley Elec. Co- op, Ozark, Ark.
* 50,000	Roanoke EMC, Rich Square, N. C.
140,000	Central Missouri Elec. Co- op, Sedalia, Mo.
950,000	Rural Electric Co., Pine Bluffs, Wyo.
275,000	Lafayette Electric Co-op, Darlington, Wis.
* 100,000	Tombigbee Electric Co-op, Guin, Ala.
175,000	Central EMC, Sanford, N. C.
770,000	Mountain Parks Electric, Inc., Granby, Colo.
282,000	Idaho County Light & Power Co-op, Grangeville, Idaho
75,000	Clay Electric Co-op, Flora, Ill.
195,000	Plumas-Sierra REC, Portola, Calif.

* Includes Section 5 funds.

165,000	Okanogan County Elec. Co-op, Winthrop, Wash.
* 100,000	Comanche County Elec. Co-op, Comanche, Texas
600,000	Jackson County REMC, Brownstown, Ind.
* 50,000	Socorro Electric Co-op, Socorro, N. M.
2,340,000	Rio Grande Elec. Co-op, Brackettville, Texas
1,265,000	Eastern Iowa Light & Power Co-op, Wilton Junction
* 50,000	Riceland Elec. Co-op, Stuttgart, Ark.

Telephone

\$ 353,000	Sierra Telephone Co., Raymond, Calif.
244,000	Dixie Telephone Co., Claxton, Ga.
658,000	Calhoun County Tel. Co., Homer, Mich.
359,000	Mid-Missouri Tel. Co., Gilliam, Mo.
297,000	Aurora Mutual Tel. Co., Aurora, Ore.
485,000	Quinlan Tel. Co., Quinlan, Texas
70,000	Cokeville Tel. Co., Cokeville, Wyo.
218,000	McLoud Tel. Co., McLoud, Okla.
131,000	Cross Tel. Co., Warner, Okla.
262,000	Klem Tel. Co., Clayton, Mo.
613,000	Twin Lakes Tel. Co-op, Gainesboro, Tenn.
75,000	Mid-Rivers Tel. Co-op, Circle, Mont.
150,000	Cutler Co-op Tel. Co., Cutler, Ind.
116,000	Champaign County Tel. Co., Champaign, Ill.

Additional loans on p. 23